

L 45920-66 EWT(1) IJP(c) AT

ACC NR: AP6028605

SOURCE CODE: UR/0057/66/036/008/1351/1356

AUTHOR: Malov,A.F.; Fedoseyev,Ye.P.

73  
B

ORG: none

TITLE: Influence of the fringe field of a plane electrostatic capacitor on the focusing of charged particles

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 8, 1966, 1351-1356

TOPIC TAGS: electron optics, electrostatic field, aberration, electric capacitor,  
CHARGED PARTICLE

ABSTRACT: The authors discuss the focusing of charged particles in the x-y plane of a rectangular Cartesian coordinate system x, y, z by the electrostatic field of two charged plates filling the half-planes  $y = \pm h$ ,  $x = 0$ . The field obtained by the conjugate function (complex transformation) method is expanded about the x-axis in powers of y, terms of higher order than  $y^2$  are neglected, and the differential equation of the trajectory is derived. The trajectory equation was solved by successive approximations for arbitrary initial conditions in the plane  $x = -3.6h/\pi$  and the results are presented in the form of equations suitable for application to specific problems. Equations are given for the focal length of the fringe field, the lateral displacement of the focus, and the angular aberration. These quantities are calculated for a specific numerical case to illustrate the use of the equations. The

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L 3618-66

ACCESSION NR: AP5024040

where it crosses the y-z plane, is denoted by  $y_0'$ . In this calculation it is assumed that the integral from  $x = 0$  of  $dx/R$  is small, where  $R$  is the radius of curvature of the trajectory in the fringe field. An expression involving a single integration is derived for the ordinate  $y(a)$  of the point at which the perturbed trajectory crosses the  $x = a$  plane. The quantity  $y(a)$  is called the displacement of the beam. A similar expression is derived for  $dy(a)/dy_0'$ . The quantity  $(dy(a)/dy_0')dy_0'$  is called the aberration. Orig. art. has: 21 formulas and 1 figure.

ASSOCIATION: none

SUBMITTED: 25Dec64

NR REF Sov: 000

mlr  
Card 2/2

ENCL: 00

OTHER 005

SUB CODE: OP, NP

L 3618-66 EWT(1)/EPA(w)-2/T/EWA(m)-2 IJP(c) AT  
ACCESSION NR: AP5024040

UR/0057/65/035/009/1617/1620  
537.533.3

H8  
B

AUTHOR: Malov, A.F.

TITLE: Aberration and displacement of a beam by a magnetic prism fringe field  
that does not vary transversely

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 9, 1965, 1617-1620

TOPIC TAGS: electron optics, spherical aberration, magnetic field, prism, mass  
spectrometer

ABSTRACT: The author calculates the effect of a fringe field on charged particle trajectories. The magnetic field is assumed to be everywhere parallel to the z-axis of a Cartesian coordinate system xyz and its strength is assumed to be a known function of x only. The portion of the field in the region  $x > 0$  is regarded as the fringe field. The author calculates the effect of the fringe field on the trajectory of a particle which moves in the x-y plane, leaves the main field (i.e., crosses the y-z plane) at the point  $(0, y_0, 0)$ , and in the absence of the fringe field would cross the x-axis at a distance  $a$  from the origin. The slope  $y_0/a$  of the unperturbed trajectory, which is also the slope of the perturbed trajectory

124011-65

ACCESSION NO.: APOLLO 59

The sources, and the equations are put into a form suitable for design computations. The effect of the fringe field is not treated. A model has been constructed and its voltage during measured. These measurements will be employed to calculate the effect of the fringe fields on ion-beam focusing. Orig. art. has 34 formulas and 4 figures.

ASSOCIATION: None

FORMULATED: 2000064

ENCL: 00

SUB CODE: NP, EM

IN-FILE SIGN: 002

OTHER: 003

Card 1/4

1971-1972 R&D	P-4 L/P(6)	
COLLECTION TIME APRIL 2055		DR/0057/45/035/005/0914/0926
LOCATION: Leningrad	Buddeley, V.A. Yerofeev, V.P.	30 B
TYPE: Nonlinear investigation of spatial focusing in magnetic focusing prism with inverse radius fields		41
SOURCE: Zhurnal tehnicheskoy fiziki, v. 35, no. 5, 1995, 914-926		
TOPIC TAGS: electron optics, mass spectrograph, magnetic prism, magnetic field, magnet, separation		
ABSTRACT: This paper gives a detailed discussion of the electron optics of a magnetic prism consisting of a sector (bounded by circular arcs passing through the symmetry axis) of an axially symmetric magnetic field, the strength of which, in the plane of symmetry, is inversely proportional to the distance from the axis. Such prisms were proposed by K.T. Bainbridge, R.Benney, and L.Davatelli (K.Siegbahn, X-ray and Gamma-ray Spectroscopy, p. 74, N.Y./Amsterdam, 1955) and have been discussed by I.Hovorka and collaborators (Chochol, J. Phys., 688, 1930, 611, 1931; 10, 520, 1932). In the present paper vertical focusing and imaging of an extended source are discussed in addition to horizontal focusing and imaging of point and		
Card 1/2		

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900039-6

L 3170-66

ACCESSION NR: AT5016964

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NO REF SOV: 002

OTHER: 002

ATD PRESS:  
4035

Card 3/3 M.d

L 3170-66

ACCESSION NR: AT5016964

22

electric and magnetic cross fields, is reported in detail. From estimates of geometrical characteristics, the dispersion of the mass separator for  $Pb^{208}$  -  $Pb^{207}$  isotopes was found to be 12.24 mm. A theoretical maximum resolution is 250,000; in practice, however, the resolution was under 1000 for  $Pb^{204}$  isotope separation. A  $Pb^{204}$  sample isolated by the above mass separator had these concentrations:  $C_{Pb^{204}} = 99.64\%$ ;  $C_{Pb^{208}} = 0.6\%$ ;  $C_{Pb^{207}} = 0.08\%$ ;  $C_{Pb^{205}} = 0.18\%$ . Allowing for the contamination of the sample by the natural mixture of Pb isotopes at the separator emitter, the sample must have contained 99.99%  $Pb^{204}$ , which corresponds to an enrichment ratio of 700,000. A sample of cadmium enriched in the mass separator contained 99.9%  $Cd^{114}$ . "In conclusion, the authors wish to thank L. A. Artsimovich for his constant attention and help and also the workers of the Institute of Atomic Energy im. I. V. Kurchatov and other organizations who took part in development, building of units, and in assembling and alignment of the outfit: V. Z. Bychkov, D. V. Pavlov, A. A. Nikulichev, N. N. Golubeva, V. F. Gavrilov, P. I. Zdobnikov, Yu. I. Kostyutkin, I. Ya. Leskov, I. G. Trifonov, Yu. Ye. Pavlov, I. M. Averin-Lavrov, S. M. Naftulin, V. I. Voloznev, S. I. Zykov, N. M. Bakanova, N. D. Ivanova, G. N. Evza; and also the group of workers directed by A. A. Dolgiy, V. F. Karpov, and G. A. Khomyachkov." Orig. art. has 6 figures and 40 formulas.

[03]

ASSOCIATION: none

Card 2/3

L 3170-66 EWT(m) DIAAP

ACCESSION NR: AT5016964

UR/3154/65/000/002/0047/0070

34  
12  
B+1

AUTHOR: Dmitruk, M. I.; Malov, A. F.; Panin, B. V.; Runov, A. D.; Soldatov, A. F.;  
Shchepkin, G. Ya.

TITLE: Mass-separation device with magnetic and electric cross-fields intended for  
the production of pure ( $C > 99\%$ ) rare isotopes of heavy elements

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Fizicheskaya elektronika, no.2,  
1965, 47-70

TOPIC TAGS: mass separation, lead isotope, cadmium isotope, rare isotope

ABSTRACT: A two-stage mass separator is described, and the results of separation of  
lead and cadmium isotopes are reported. An electro-magnetic mass separator  
described by L. A. Artsimovich, et. al. (Atomnaya energiya, 3, 483, 1957) was used  
as the first stage; its focusing angle  $1.25\pi$  was changed to  $\pi\sqrt{2}$ . The second  
stage developed after D. Z. Fischer's device. (Phys., 133, 471, 1952), has electric  
and magnetic fields of special configurations in the same space; this arrangement  
permits the focusing of ions separated according to their masses and energies  
simultaneously with the vertical and horizontal focusing of particles. The design  
of the second stage, performed on the basis of the general theory of axisymmetrical

Card 1/3

A magnetic spectrometer of internal ...

27476  
S/048/61/025/009/001/007  
B10./B102

Instr., 31, 249 (1960); Motz H. T., Phys. Rev., 104, 1353 (1956); De Vries et al., Nucl. Instr. and Meth., 8, 121 (1960); Graham R. L. et al., Nucl. Instr. and Meth., 2, 245 (1960).

Fig. 1: Schematic representation of the experimental arrangement. Legend: (1) Core; (2) graphite reflector; (3) target; (4) spectrometer; (5) trap; (A) reactor shield; (B) paraffin +  $B_4C$ .

Fig. 2: Schematic representation of the spectrometer. Legend: (A) Neutrons; (B) magnetic flux; (S) target; ( $W_1$ ) and ( $W_2$ ) spectrometer slits; ( $C_1$ ) and ( $C_2$ ) Geiger counters.

Fig. 5: Vertical section of the spectrometer through the symmetry axes of the magnetic fields. Legend: (1) Wall of the vacuum chamber; (2) rubber seal; (3) pole shoes; (4) excitation coil; (5) framework; (6) Pb lump.

27476  
S/048/61/025/009/001/007  
B104/B102

A magnetic spectrometer of internal ... width of the slit  $W_2$ ;  $r_0$  is the mean radius of the electron trajectory;  $h$  is the height of the slit;  $\psi_r^0$  is the tangent of the radial aperture angle of electron capture;  $\psi_z^0$  is the tangent of the axial aperture angle of electron capture; and  $\beta$  is a field coefficient. The image of the target is thoroughly studied for slight fluctuations of  $H$ , and the relation  $\Omega \propto Sx_1 x_2 / 8\pi r_0^2$  is given for the mean relative solid angle. Here,  $S/8\pi r_0^2$  is the relative solid angle for a point of the target;  $x_1$  and  $x_2$  are numerical coefficients. The design of the spectrometer is explained in detail with the aid of Fig. 5. The final part of the paper deals with the adjustment of the spectrometer. The authors thank L. V. Groshev and A. M. Demidov for assistance, D. V. Pavlov for participating in the design of the spectrometer, I. M. Kamyshev for the elaboration of details of the design and for drawings, A. S. Volkov for the construction of control apparatus, and F. V. Nemtsov for mounting the spectrometer. There are 9 figures and 26 references: 8 Soviet and 18 non-Soviet. The most important references to English-language publications read as follows: Daniel H., Rev. Sci. Card 3/7

27476  
S/048/61/025/009/001/007  
B104/B102

A magnetic spectrometer of internal...

design (Fig. 2) with an axisymmetric field, by which the electrons are doubly focused. The mean radius of the electron trajectory is 30 cm. This principle of focusing was chosen to ensure a large angle of aperture for a sufficient resolution of the spectrometer. This is necessary because of the small neutron flux at the target of about  $10^9$  neutrons/cm<sup>-2</sup>sec<sup>-1</sup>. The magnetic field for the plane of symmetry  $z = 0$  is given by

$$H_z(r,0) = H_0 \left(1 + \alpha \frac{r-r_0}{r_0} + \beta \left(\frac{r-r_0}{r_0}\right)^2 + \dots\right) \quad (1), \text{ where } \alpha = -1/2,$$

$\beta = 1/8$ .  $\gamma = 8/H_0$  is obtained for the momentum dispersion. Here, the dispersions of the electron trajectories between the pole pieces and the electron scattering in the target, in the films and in the gas of the counter  $C_1$ , and in the residual gas of the spectrometer chamber were neglected. Neglecting the collimating action of the slit, the following expression is found for the resolution of the spectrometer:

$$R_{1/2} = \frac{2Q}{16r_0} + \frac{14\beta-31}{96} \left(\frac{h}{r_0}\right)^2 + \frac{|1-8\beta|}{12} (\psi_r^0)^2 + \frac{|8\beta-31|}{12} (\psi_z^0)^2, \text{ where } Q \text{ is the}$$

Card 2/7

21-6000  
AUTHORS:

TITLE:

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25,  
no. 9, 1961, 1069 - 1083

27476  
S/048/61/025/009/001/007  
B104/B102

4. TEXT: This paper was read at the 9th Annual Conference on Nuclear  
reactor Spectroscopy. The authors describe an experimental installation at the  
reactor of IRT AS USSR. The installation, which is equipped with a special  
magnetic spectrometer, is used for analyzing internal conversion electrons  
emitted by nuclei during radiative capture of thermal neutrons. The  
core of the reactor pass through a channel (diameter, 10 cm) and, after  
traveling ~4m, incide on the Cd<sup>113</sup> target of the spectrometer. The neutron  
beam is 3.3 cm large. In the spectrometer, the electrons from the  
coming from the target are focused in opposite direction to the neutrons  
Card 1/7

MALOV, A. F., Cand. Phys-Math. Sci. (diss) "On Some Ion-Optic  
Properties of Static Axial-Symmetric Magnetic and Electric Fields."  
Moscow, 1961, 11 pp (Moscow Engineering-Physics Institut.) 149  
copies (KL Supp 12-61, 252).

A Magnetic Gamma Spectrometer With High Resolving Power S/048/60/024/007/002/011  
B019/B060

layer. The novelty in the spectrometer described here consists in that the energy of the Compton electrons is analyzed with two different magnetic fields. The first axisymmetric magnetic field is produced in a device called separator and collects the Compton electrons coming from the converter by means of a horizontal and a vertical slit on a counter  $C_1$ . The

electrons then reach a magnetic analyzer, the  $\beta$ -spectrometer proper and are there again collected on a counter  $C_2$ . In the experiment, the dependence of the number of pulse coincidences in the counters  $C_1$  and  $C_2$  on the

magnitude of the analyzer field is measured, the separator field changing with the analyzer field. The authors then give formulas (1) and (2) which describe the magnetic field. In the following sections, they describe the capture angles of electrons, the resolving power, the spectral sensitivity of the spectrometer and its construction in great detail. The authors finally thank D. V. Pavlov for his calculation of the magnet system, I. M. Kamyshev for having designed the instrument and for having provided the drawings, A. S. Volkov for having worked out the electronic equipment, and the reactor team for their assistance in the measurements. There are 8 figures and 12 references: 6 Soviet, 5 US, and 1 Swedish.

Card 2/2

26.2264

AUTHORS:

Groshev, L. V., Demidov, A. M., Lutsenko, V. N.,  
Malov, A. F.

TITLE:

A Magnetic Gamma Spectrometer <sup>19</sup> With High Resolving Power

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,  
Vol. 24, No. 7, pp. 791-801

TEXT: This is the reproduction of a lecture delivered at the 10th All-Union Conference on Nuclear Spectroscopy held in Moscow from January 19 to 27, 1960. The authors describe a new magnetic Compton spectrometer which allows the gamma spectrum to be measured in the energy range of 0.3-12 Mev with a resolution of 0.3% at  $\hbar\nu > 2$  Mev. Resolution becomes poorer at lower energies. Fig. 1 shows a scheme of the experimental arrangement, investigating the spectrometer described here was used and which served for investigating the spectrum of gamma emission caused by the capture of thermal neutrons. The sample investigated was placed in a core-tangential channel of an MPt(IRT) reactor near the core and was collimated with iron and lead diaphragms. The neutrons were filtered by means of a 10 cm thick paraffin

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S/068/59/023/012/001/009

Book/3060

245300

AUTHORS: Batanov, S. A., Zalenskii, A. G., Shchepkin, G. Ye.,  
Berkhov, V. F., ~~Shchepkin, G. Ye.~~TITLE: A Large  $\alpha$ -Spectrometer With Double PulsingPERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1959,  
Vol. 25, No. 12, pp. 1602 - 1610

TEXT: The present paper offers a description of an efficient  $\alpha$ -spectrometer ( $(V_2^2 - \text{Zacharias})$ , devised by the authors for the microscopic investigation of the  $\alpha$ -decay. The magnetic field distribution in the gap may be approximated by the series  $B_2 = 1 + a_1 T_0 + a_2 T_0^2 + a_3 T_0^3 + \dots$ , where  $a_0$  denotes the field in the central orbit with the curvature radius  $R_0$ ;  $T_0 = \frac{q}{q-2}$ . The coefficients of the expansion were chosen to be  $a_1 = -1/2$ ,  $a_2 = 1/5$ ,  $a_3 = 3/16$ .  $R_0$  was chosen to be 155 cm to allow for the highest possible resolving power of the device and maximum light intensity. The

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device, weighing 90 kg, consists mainly of the magnet with the excitation winding and of the vacuum chamber placed into the gap between the poles. The width between the poles is  $\sim 70$  cm. The gap width between the two poles is  $\sim 5$  cm. Fig. 1 shows a picture of the complete equipment. Fig. 2 shows a scheme of action through the magnet. Pressure reduction down to the minimum of 10<sup>-6</sup> torr was rendered possible by the connection of the chamber (volume 1) to a fore-pump of type T-12, and to a vacuum tank T-12A, which has a cross-section through the cylindrical spectrograph. The outer dimensions (maximum diameter  $\sim 100$  cm) were placed in a special device whose main diaphragm served for the limitation of the beam. The diaphragm was placed in the central part of the chamber (under voltage  $\sim 10^5$  volt/cm<sup>2</sup>), where the beam has the maximum cross-section. The magnetic field is obtained by means of a propeller-shaped counter of the form shown in Fig. 3. Schematically, a set of plates with a total area of  $450 \times 90$  cm<sup>2</sup> may be exposed. Fig. 4 shows the supply of the device schematically. The water-cooled magnet winding consists of copper wire having a 170-10 mm cross-section and has 55 turns. The working current of the magnet is 700-500 A, corresponding to a field potential of 0.0 - 0.5 esu. Note

Card 2/4

details are given in the connection. Fig. 5 shows a scheme of the system, briefly discussed, for the stabilization of the magnetic field. The magnetic resonance is carried out by means of the paramagnetic proton resonance. A 0.5-ampere solenoid of rectangular cross-section was directly placed in the magnet gap. The entire block consists of two sections, each 10 cm long, shown in Fig. 6. The error of the latter does not exceed 1% for the production of the magnetic field to be used in the discussed part. For this purpose two devices were developed, one consisting of a signal measurement system of a ballistic galvanometer, the other consisting of a Geiger-Muller tube. Both devices were very sensitive to  $\alpha$ -rays. The results of the measurements are given in Fig. 7. The resolution of the device was measured in another Fig. 8. Finally the ion-optical properties of the device were discussed. Fig. 9 shows the shape of the focal surfaces. The energy range of the  $\alpha$ -particles was  $\sim 10^5$  esu and was simultaneously recorded by photographic plates. The half-width of the lines within the whole range was  $\sim 0.1$ . The dispersion  $dE/dx$  was  $\sim 2.18 \cdot 10^{-4}$  esu/cm. This comes up to  $\sim 1.2$  kev  $\text{cm}^{-1}$  for  $D = 210$  cm. The resolving power of the device is illustrated by the

Card 3/4

APPENDIX OF CA 2452 shown in Fig. 10. Finally the authors thank the following persons for interest and assistance: I. V. Suturin, V. V. Suturina, L. A. Afanas'ev, V. Z. Sushkov, A. M. Batshev, V. V. Savchenko, V. N. Smirnov, S. G. Zhuravlev, V. P. Kostylev, V. V. Rukhadze, A. A. Andronikashvili, D. V. Davydenko, A. N. Nikulin, V. V. Kuklin, V. A. Dzhaparidze, S. N. Bozhenko, A. D. Rykov, I. T. Tsvetkov, and A. V. Tikhonov. In addition, there are 10 figures, 1 table, and 13 references: 6 Soviet,

11-V-27-HU

*MALOV, A.F.*

21(10), 21(8) 307/69-7-3-14/23

AUTHORS: Baranov, S. A., Zelenkov, A. G., Beruchko, V. V., Malov, A. F.

Shchepkin, G. Ya..

January 1959.

ABSTRACT: This article is based on a lecture delivered at the 9. All-Union Congress of Nuclear Spectroscopy (Khar'kov, January 1959). The spectrometer developed belongs to the "F"-type, in which, for the purpose of improving sensitivity accompanied by a high degree of resolving power, the radius of the central orbit was considerably enlarged (155 cm). The magnet has the shape of a mushroom and is composed of 3 parts: the core, a cylindrical part, and 2 "hatas" (photograph attached). The width of the pole tips is ~70 cm, the distance between them is 35 cm, and the total weight is 90 t. Profiled end plates are fastened to the pole shoes; their form is calculated by means of an analytical method. The operation chamber has a content of ~1000 l. Evacuation is brought about by a YU-2 forepump. As a high-vacuum pump a VH-5A-type unit is used. The operating vacuum amounts to some 10<sup>-5</sup> torr. It is possible to measure 4 radioactive pre-

PARTICLES: A Large  $\alpha$ -Spectrometer

PERIODICAL: Atomnaya Energiya, 1959, Vol. 7, Nr. 3, pp. 262-264 (USSR)

This article is based on a lecture delivered at the 9. All-Union Congress of Nuclear Spectroscopy (Khar'kov, January 1959). The spectrometer developed belongs to the "F"-type, in which, for the purpose of improving sensitivity accompanied by a high degree of resolving power, the radius of the central orbit was considerably enlarged (155 cm). The magnet has the shape of a mushroom and is composed of 3 parts: the core, a cylindrical part, and 2 "hatas" (photograph attached). The width of the pole tips is ~70 cm, the distance between them is 35 cm, and the total weight is 90 t. Profiled end plates are fastened to the pole shoes; their form is calculated by means of an analytical method. The operation chamber has a content of ~1000 l. Evacuation is brought about by a YU-2 forepump. As a high-vacuum pump a VH-5A-type unit is used. The operating vacuum amounts to some 10<sup>-5</sup> torr. It is possible to measure 4 radioactive pre-

PARTICLES: A Large  $\alpha$ -Spectrometer

partitions successively without the vacuum being influenced. The maximum size of the source is 100 cm. Recording of the  $\alpha$ -particles is carried out either by means of a proportional counter or by means of thick layered photo-cathodes. The magnetic field coils are fed by a servomotor which is, in turn, connected with a 35 kv motor generator by way of a DB-55 choke. Within the operational range of the current of 700-1300 amperes, which corresponds to a field strength of 2.0-1.5 koe, stabilization of the magnetic field is described more closely by reference 6. During this measurement the maximum deviation of the magnets from the previously adjusted value is less than 2.0%. The course of 8 hours of perpetual operation, the energy of the field distribution was experimentally investigated with great exactitude. Boundary effects were minimized in accordance with reference 7. On the basis of the photographs which it is possible to determine the shape of the distributions of the  $\alpha$ -radiation sources, which the chamber is bounded. The maximum utilized solid angle of service is  $6 \cdot 10^{-4}$  of  $4\pi$ . The half-width of the lines along the axis of the source is 2 mm. The dispersion of the service hundredth parts of a percent. The dispersion of the service for the  $\alpha$ -particles of Po-210 was measured. The sources may have a weight of up to 100 kg. Long-life  $\alpha$ -radiation sources with a half-life of up to 2000 years are still

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Card 2/5

Card 3/3

MALOV, A. F.

Some ion-optical properties of static, axially symmetrical  
magnetic and electric fields. Nek.vop.eksp.fiz. no.2:54-68  
'59. (MIRA 13:2)

(Magnetic fields) (Electric fields)  
(Magnetooptics)

*MALOV, A. F.*

PHASE I BOOK

TON

SOV/3556

Moscow. Inzhenerno-fizichesky Institut  
Nekotorye voprosy eksperimental'noy fiziki; [sbornik] vyp. 2

Nekotorye voprosy eksperimental'noy fiziki. Collection of Articles.  
(Some Problems in Experimental Physics). Collection of Articles printed.

(Sbornik). Moscow, Atomizdat, 1959. 125 p. 3,200 copies printed.

N.P. 1 Moscow, Administrativnye vyschene 1 sredne

Sponsoring Agency: RSFSR. Administretive vyschene 1 sredne

spetsial'nogo obrazovaniya.

Editor: B.M. Stepanov. Doctor of Physical and Mathematical Sciences,

Professor; Tech. Ed.: S.M. Popova.

PURPOSE: This collection of articles is intended for Graduate

Engineers and Physicists engaged in the Design of Physical Equipment,  
laboratory apparatus, and automatic and biomechanical equipment.

COVERAGE: This collection of articles on experimental physics was  
written by members of the Moscow Physics and Engineering Institute

and written by members of the Moscow Physics and Engineering Institute

and written by members of the Moscow Physics and Engineering Institute

and written by members of the Moscow Physics and Engineering Institute

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and written by members of the Moscow Physics and Engineering Institute

Electromagnetic Isotope Separating Device for Heavy Element of 89-12-1/29  
High Resolving Power.

160 to 360 for  $Pu^{241}$  concentrated from samples of  
different isotope compositions  
There are 4 tables, 8 figures and 3 Slavic references.

SUBMITTED: August 21, 1957

AVAILABLE: Library of Congress

Card 3/3

Electromagnetic Isotope Separating Device for Heavy Elements of 89-12-1/29  
High Resolving Power.

Pump system has been arranged so that a working vacuum of  $4\text{--}6 \cdot 10^{-6}$  mm Hg is always guaranteed. When separating toxic materials moving locks, valves and regulators from synthetic and rubber are applied. The high vacuum here is maintained by means of a surge chamber.

A normal gas discharge source of ions, in which the material to be separated can be heated up to  $1000^{\circ}\text{C}$ , is used as source of ions.

Boxes from copper or graphite are usually used as targets. The following results were obtained:

Concentration factor:

75 to 302	for Pb <sup>208</sup>	concentrated from the natural lead-isotope mixture
22 to 71	for Pb <sup>207</sup>	"
151 to 214	for U <sup>238</sup>	concentrated from natural uranium
985 to 1420	for U <sup>236</sup>	"
1000	for Pu <sup>239</sup>	concentrated from samples of different isotope compositions
Card 2/3	190 to 300	for Pu <sup>240</sup>

MALOV, A. F.

AUTHORS:

Artsimovich, L. A., Shchepkin, G. Ya., Zhukov, V. V., 89-12-1/29  
Makov, B. N., Maksimov, S. P., Malov, A. F., Nikulichev, A. A.,  
Panin, B. V., Brezhnev, B. G.

TITLE:

Electromagnetic Isotope Separating Device for Heavy Elements of  
High Resolving Power.(Elektromagnitnaya ustanova s vysokoy ra-  
zreshayushchey siloy dlya razdeleniya izotopov tyazhelykh elemen-  
tov)

PERIODICAL:

Atomnaya Energiya, 1957, Vol. 3, Nr 12, pp. 483-491 (USSR)

ABSTRACT:

The constructed apparatus, which shall be able to separate clearly isotopes even with a relative mass difference of 1/240, must have a high dispersion, a high resolving power and especially well stabilized magnetical and electrical fields. An axial-symmetrical field, the dispersion of which is proportional to the square of the focusing angle, was used as a magnetic field. The focusing angle is 225°. The measured dispersion of the apparatus amounts to 20 mm at a relative mass difference of the masses to be separated of 1%.

The stabilization of the magnetic field of the separating device has been brought to 0,005% by the aid of a valve scheme. The acceleration velocity for the source of ions (up to 40 kV) is stabilized by a double cascade scheme up to 0,01%. But also the current in the discharge source of ions is stabilized. The vacuum chamber is constructed from stainless steel, in a C-shape. The

MALOV, A.F.

BARANOV, S.A.; MALOV, A.F.; SHLYAGIN, K.N.

Double-focusing beta-spectrometer. Prib. i tekhn. eksp.  
no.1:3-12 Jl-Ag '56.

(MLRA 10:2)

(Electrons--Spectra) (Beta rays--Spectra)  
(Spectrometer)

MALOV, Arnold Dmitriyevich, Inzh., FILIPPOVA, L. S., red.

[Fastening of goods on platform freight cars for transportation under high-speed traffic conditions.] Kreplenie gruzov na otkrytym podvizhnym sostave dlja perevozki pri vysokikh skorostialkh dvizheniiach. Moskva, Transport, 1965. 166 p. (Moscow. Vsesotsuznyj nauchno-issledovatel'skij institut zheleznodorozhnogo transporta. Trudy, no.294). (MIRA 18:10)

MALOV, A.D., otvetstvennyy za vypusk; BOBROVA, Ye.N., tekhn.red.

[Directives on methodology of working out engineering specifications for freight loading and fastening and engineering specifications for unloading railroad cars] Metodicheskie ukazaniia po razrabotke tekhnicheskikh uslovii pogruzki i krepleniya gruzov i tekhnicheskikh norm zagruzki vagonov. Moskva, Gos.transp. zhel-dor. izd-vo. 1958. 23 p. (Informatsionnyi listok, no.11). (MIRA 12:5)

1. Russia (1923- U.S.S.R. Glavnoye gruzovoye upravleniye.  
(Railroads--Specifications) (Railroads--Freight)  
(Loading and unloading)

Card 1/1

hs  
UDC: 621.313.3.017.71: 681.142-83  
0915 15521

GLEBOVICH, Ya.O.; MALOV, A.D.

Extrapleural empyema caused by Salmonella infection. Sov.med. 20  
no.11:84-86 N '56. (MIR 10:1)

1. Iz kafedry tuberkuleza (nachal'nik - prof. V.M.Novodvorskij)  
Voyenno-meditsinskoy Ordona Lenina akademii imeni S.M.Kirova.

(TUBERCULOSIS, PULMONARY, compl.  
extrapleural empyema, isolation of Salmonella from  
exudate)

(SALMONELLA INFECTIONS  
isolation of Salmonella from exudate in tuberc. extrapleural  
empyema)

MALOUN, B.; KREJCI, A.; SOWA, F.

"Amino Acids and Peptides. IX. Constitution of the Peptide Phallolidine. II."  
"Sbornik chemickych oznaczen. Sbornik chemickych oznaczen. Sbornik chemickych oznaczen.  
p. 153, (COLLECTION OF CHEMICAL CLASSIFICATIONS. Sbornik chemickych oznaczen. Sbornik chemickych oznaczen.  
SEIKA KHEMICHESKIH RABOT, Vol. 10, No. 1, Feb. 1954, Praha, Czechoslovakia.)

SO: Monthly List of East European Accessions, (EEL), 10, Vol. 4  
No. 5, May 1955, Unclassified.

MALOTA, H.; BEHOUNKOVA, L.; MARSALEK, E., technicka spoluprace CAPKOVA, A.

Participation of various microbial species in the development of  
bronchial asthma of infectious allergic origin. Cas.lek.cesk 100 no.43:  
1363-1366 27 0 '61.

1. Alergologicke stred. II interni kliniky PU v Olomouci, prednosta  
doc. dr. Z. Kojecky. Ustav lekarsky mikrobiologie, prednosta doc. dr.  
E. Marsalek.

(ASTHMA microbiol)

MARSALEK, E.; MALOTA, H.; BEHOUNKOVA, L.

Treatment of bronchial asthma with complete microbial antigens.  
Cas.lek.cesk.99 no.48:1514-1519 25 N '60.

1. Ustav lekarske mikrobiologie, prednosta doc. dr. E.Marsalek,  
alergologicke stred. II. interni kliniky PU v Olomouci prednosta  
doc.dr. Z.Kojecky.

(ASTHMA ther)  
(ANTIGENS ther)

BAYER, A.; BENYSEK, L.; MALOTA, H.

Allergic granulomatosis. Cas.lek.cesk. 99 no.48:1501-1505 25 II '60.

1. II. interni klinika lekarske fakulty PU v Olomouci, zast. pred-  
nosta doc.dr. Z.Kojecky. Patologickoanatomicky ustav lekarske  
fakulty PU v Olomouci, prednosta doc.dr. C.Dvoracek.

(ASTHMA compl)  
(GRANULOMA etiol)

VOLEJNIK, J.; MALOTA, H.

Frontal sinusitis in allergic respiratory syndrome in children.  
Cesk.pediat.15 no.6/7:631-635 J1'60.

I. Detska klinika v Olomouci, prednosta doc.dr.Antonin Mores.  
II. interni klinika v Olomouci, prednosta doc.dr. Z.Kojecky.  
(ASTHMA in inf & child)  
(FRONTAL SINUSES dis)  
(SINUSITIS in inf & child)

MALOTA, Aristid, MVDr.

Production of feeds from the forestomachs of cattle. Prum  
potravin 14 no. 5:231 My '63.

1. Veterinarni hygienicka sluzba, Gottwaldov.

MALOSTOVSKAYA, (ABRAVENKO), Mariam L'vovna

Treatment (snom) of Acute Infectious Trachea and Epilepsy

Dissertation for Candidate of Medical Science degree, Chair of Nerve  
Diseases (head, Asst. Prof. A.V. Ill'yanova) Saratov Medical Institute, 1956

MALOSTOVSKAYA, M. L.

Malostovskaya, M. L. "Atypic forms of hepato-lenticular degeneration (Report to  
3rd scientific conference of Saratov medical institute, March 1941),"  
Trudy (Sarat. gos. med. in-t), Vol. VII, 1948, p. 169-76

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949)

MALOSTOVSKAYA, M. L.

Malostovskaya, M. L.—"On the problem of the interrelation of post-oncophilic parkinsonism with pathologic change of the black substance, Zemmering," (Report on 2nd scientific conference of Saratov Medical Institute, 1940), Trudy (Sarat. gos. med. in-t), Vol. VII, 1948, p. 151-58

SO: U-3204, 10 April 1953, (Letopis 'Zhurnal 'Iryki' Statey, No. 3, 1949)

ACC NR:

that the cohesion strength of elastomer specimens treated with pseudo-plasticizers decreases with an increase in the shelf life of the elastomer specimens to be bonded; for individual systems cohesion strength attains a constant minimum value. Radiometric measurements conducted with C<sup>14</sup>-tagged dibutyl phthalate showed that the cohesion strength of bonded P-200 specimens is inversely proportional to the amount of pseudo-plasticizers which has migrated from the bulk to the surface of the specimen. The authors thank P. A. Zagorets for making it possible to conduct the experiment and for his attention to the paper. Orig. art. has 4 figures.

SUB CODE: 11/ SUBM DATE: 280ct65/ ORIG REF: 008/ OTH REF: 004

Card 2/2

ACC NR: AP7003764 (A) SOURCE CODE: UR/0374/66/000/006/0857/0861

AUTHOR: Maloshuk, Yu. S.; Titarenko, A. T.; Rayevskiy, V. G.;  
Voyutskiy, S. S.

ORG: Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov  
(Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Cohesion of technical elastomer systems. 3. Effect of the migration of pseudoplasticizers on the cohesion of elastomer systems.

SOURCE: Mekhanika polimerov, no. 6, 1966, 857-861

TOPIC TAGS: elastomer, plasticizer, cohesion

ABSTRACT: A study has been made of the dependence of the cohesion strength on the shelf life of raw rubber specimens plasticized with "pseudoplasticizers" (plasticizers incompatible with the rubbers). The experiments were conducted with strips of polar nitrile (SKN-40) or nonpolar polyisobutylene (P-200) rubber plasticized with 3-5 parts by volume medical vaseline oil or 5-15 parts by volume dibutyl phthalate per 100 parts of the polymer, respectively. The amount of plasticizers was selected so as to exceed its maximum amount compatible with the rubber but not to affect the processing properties of the elastomer. The cohesion strength was measured in stripping tests. It was shown

Card 1/2

678:532.6

L 3162-66

ACCESSION NR: AP5016886

of incompatible plasticizers; and 3) the cohesion strength of the compatible system, SKN-40 rubber—dibutyl phthalate, goes through a maximum. The results are discussed in some detail and it is concluded that they confirm the diffusion nature of cohesion phenomena. Orig. art. has: 3 figures. [BO]

ASSOCIATION: none

SUBMITTED: 01Dec64

ENCL: 00

SUB CODE: MT

NO REF SOV: 003

OTHER: 001

ATD PRESS: 4031

Card 2/2 MHD

L 3162-66 EWT(m)/EPF(c)/EWP(j) RM

ACCESSION NR: AP5016886

UR/0374/65/000/003/0077/0080  
678:532.6

AUTHOR: Maloshuk, Yu. S. (Moscow); Rayevskiy, V. G. (Moscow); Semenikhina, A. A. (Moscow); Voyutskiy, S. S. (Moscow)

TITLE: Cohesion of industrial elastomeric systems. 2. Effect of the amount of added plasticizer on cohesion strength

SOURCE: Mekhanika polimerov, no. 3, 1965, 77-80

TOPIC TAGS: cohesion strength, nitrile rubber, monopolar polyisobutylene, plasticized system

ABSTRACT: A study has been made of the effect of the amount of different plasticizers on the cohesion strength of elastomeric systems. The experiments were conducted with (polar) SKN-40<sup>b</sup> nitrile rubber and (nonpolar) P-200<sup>b</sup> polyisobutylene. The rubbers were plasticized with dibutyl phthalate, PN-6<sup>b</sup> oil, or vaseline oil, which exhibit varying compatibility with the rubbers. The plasticizers were added in amounts (7--50 vol%) which would not affect the processability of the systems. The results of the study, given in tabular form, indicated that: 1) cohesion strength increases monotonically with an increase in the amount of compatible plasticizer; 2) the cohesion strength drops continuously with an increase in the amount

Card 1/2

ASSOCIATION: none  
ASSOCIATION NR.: AF5012424

Item was determined by stripping tests. Curves of cohesion strength versus holding time under 100 g/cm<sup>2</sup> (uncompressive load) were plotted. The cohesion strength of the systems increased with compatibility. Curves of cohesion strength versus maximum available cohesion for uncrosslinked systems were plotted. From these curves it was concluded that the cohesion strength is directly proportional to compatibility. Orig. [BO] and two best curves and 1 table.

ASSOCIATION: none

SUBMITTED: 01 Dec 64

NO RISK: 50%

INCL: 00

OTHER: 002

SUB CODE: MT, FP

ATT PRESS: 4004

Card 2/2

REF ID: A65545	REF ID: M650	REF ID: P654
RECEIPT DATE: 2020	SEARCHED (S) / INDEXED (I) / DRAFT (D) / DCR	PC-4/POL, PG-4 WW/RM 35 B IR/0374/65/000/002/0015/0020
AUTHOR: V. G. Semenikhina, A. A.		
MATERIAL: V. G. (Moscow); Bayevskiy, V. G. (Moscow)		
TOPIC: Compatibilization of industrial elastomeric systems. I. Effect of the compatibility of the plasticizer and elastomer on cohesion strength		
SOURCE: Mekhanika polimerov, no. 2, 1965, 15-20		
KEY WORDS: elastomer, plasticizer, compatibility, cohesion		
ABSTRACT: A study has been made of the compatibility of plasticizers with polymers, of the cohesion of plasticized elastomeric systems, and of the relationship between the cohesion and compatibility. The experiments were conducted with (polar) polyisobutylene and the following (nonpolar) polymers: (SKN-40) and (norpolar) polyacrylylene (molecular weight, 100,000); dibutyl phthalate, "V-6" oil (molecular weight, 300), benzene-naphthene hydrocarbons, 2.3%; resins, 6.7%; medical mineral oil. Compatibility was estimated from swelling and adhesion and kinetics curves. For the case of (polar) SKN-40, compatibility increased with the polarity of the plasticizer. Dibutyl phthalate was shown to be fully compatible with this rubber. For the case of (nonpolar) PV-6, compatibility dropped with the polarity of the plasticizer. The cohesion strength of plasticized elastomeric sys-		
Card 1/1		

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900039-6

Consequently, the first step in the development of a new technique is to determine the physical properties of the material to be measured. In the case of the present investigation, the physical properties of the materials used were determined by methods which have been described previously.<sup>1</sup> The results of these measurements are summarized in Table I.

MALOSHUK, V.V.

"Electrochemistry"

The oxygen overvoltage in sulfuric acid solutions. N. A. Izgarvalov, E. A. Efimov, and V. V. Maloshuk. (D. I. Mendeleev Chem. Technol. Inst., Moscow) Zhur. Fiz. Khim. 27, 310-11(1953); cf. C.A. 47, 58239. — The magnitude  $dE/d \log i$  is a discontinuous function of the concn. of  $H_2SO_4$ , and the breaks of the curve appear at the compns. corresponding to hydrates such as  $H_2SO_4 \cdot 6H_2O$  and  $H_2SO_4 \cdot 2H_2O$ .  $E$  is overvoltage;  $i$  is c.d. J. J. Bikerman

6  
③ Chem  
1-13-54

1. IZGARYSHEV, N. A.; EFIMOV, Ye. A.; MALOSHUK, V. A.
2. USSR (600)
4. Overvoltage
7. Oxygen overvoltage in solutions of sulfuric acid. Zhur. fiz. khim. 27, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Unclassified.

MALOSHIVICHENKO, V. N.

Petroleum - By-products

The adhesive quality of petrolatum., Sad i og., no. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, May 1952 UNCLASSIFIED.

L 30779-66

ACC NR: AP6022139

carbon. The capability for polycondensation of the alkyldiphosphinic acids obtained and their conversion into cross-linked polymers in their reaction with metal oxides has been demonstrated in the investigation. Orig. art. has 1 figure and 2 tables. [JPRS]

SUB CODE: 07 / SUBM DATE: 28Dec63 / ORIG REF: 008 / OTH REF: 005

Card 2/2

JS

L 30779-66 EWP(j)/EWT(m)/T IJP(c) RM  
 SOURCE CODE: UR/0080/65/038/012/2804/2807

ACC NR: AP6022139

AUTHOR: Berlin, A. A.; Shau-ch'uan, Huang--Shau-Tsyuan', Khuan; Maloshitskiy, A. S.

ORG: none

TITLE: Synthesis and investigation of the products of heptane and dodecane chlorophosphorylation

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 12, 1965, 2804-2807

TOPIC TAGS: chlorinated organic compound, alkylphosphine, phosphorylation, hydrocarbon, oxidation, polycondensation

ABSTRACT: The effect of the  $\text{PCl}_3:\text{RH}$  ratio on production of dichlorhydrides of alkylmono- and alkylidiphosphinic acids was studied. The investigation was conducted with heptane and dodecane. The data obtained shows that with an increase in the  $\text{PCl}_3:\text{RH}$  ratio, the yield of alkylidiphosphinic acid chloride rises, and the yield of the undistilled residue also rises. This consists of more highly phosphorylated paraffins or their reaction products. The optimal  $\text{PCl}_3:\text{RH}$  ratio can be selected from a graph of the yield of phosphorylation products as a function of the  $\text{PCl}_3:\text{RH}$  ratio. It must be noted that at low  $\text{PCl}_3:\text{RH}$  ratios the rate at which the reaction mixture becomes colored rises sharply. This is evidently related to oxidation of the hydro-

UDC: 547.217.1/.9+542.944.945.3

0915

0056

Card 1/2

ACCESSION NR: AP4037292

has: 2 diagrams and 1 table.

ASSOCIATION: Moscovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology); Institut elemento-organicheskikh soyedineniy AN SSSR (Institute of Elementoorganic Compounds, AN SSSR)

SUBMITTED: 09Jul63

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: MT, OC

NO REF SOV: 001

OTHER: 003

Card 2/2

ACCESSION NR: AP4037292

S/0190/64/006/005/0957/0961

AUTHORS: Maloshitskiy, A. S.; Kolesnikov, G. S.; Malinovskaya, T. P.

TITLE: Carbochain polymers and copolymers. 54. Polymerization of methylmethacrylate in the presence of n-butylboryldifluoride

SOURCE: Vyssokomolekulyarnye soyedineniya, v. 6, no. 5, 1964, 957-961

TOPIC TAGS: methylmethacrylate polymerization, butylboryldifluoride polymerization initiator, water catalysis, dilatometric technique

ABSTRACT: The polymerization of methylmethacrylate (MMC) in the presence of 0.15 mole% n-butylboryldifluoride (BBD) was conducted in a dilatometer at 30C in an atmosphere of argon. Since no reaction took place in absolutely dry ingredients, the opportunity was presented to study the effect of water on the polymerization process. From 10 to 80 mole% of water per mole of MMC were added to the ampules containing the MMC and BBD, and the mixture was heated for 2 to 45 hours, yielding 0.33-4.75% polymer. It was found that the maximum polymerization rate was obtained at 50 mole% of water per mole of MMC. A detailed description and drawings of the apparatus used for adding the BBD and MMC to the ampule are presented. Orig. art.

Cord 1/2

Synthesis of Unsaturated Polyamides and Polyesters by Interfacial Polycondensation

87032

S/190/60/002/007/016/017  
B020/B052

content (in polyamides), carbon and hydrogen contents (in polyesters) were determined, and the radiographs were taken (Fig. 2). 50-60% of the theoretical polymer yield was obtained. The results are given in a table. When heated all polyamides obtained decompose without melting. The majority of the polyamides endure temperatures of up to 250 to 280°C, although slight compression deformations occur. Synthetic polyamides have a high molecular weight. The softening of polyesters from fumaric acid chlorides sets in between 120 and 140°C. The X-ray pictures show that the polyamides and polyesters obtained have an ordered structure, and some may be called crystalline. The authors finally thank A. I. Kitaygorodskiy and G. L. Slonimskiy, and their collaborators for carrying out the X-ray analysis, and the determination of thermomechanical properties of the polymers obtained. There are 2 figures and 1 table.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov). Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemental-organic Compounds of the AS USSR)

SUBMITTED: March 2, 1960

Card 2/2

87032

S/190/60/002/007/016/017  
B020/B052

15.8107

AUTHORS: Kolesnikov, G. S., Maloshitskiy, A. S.

TITLE: Synthesis of Unsaturated Polyamides and Polyesters by Interfacial Polycondensation

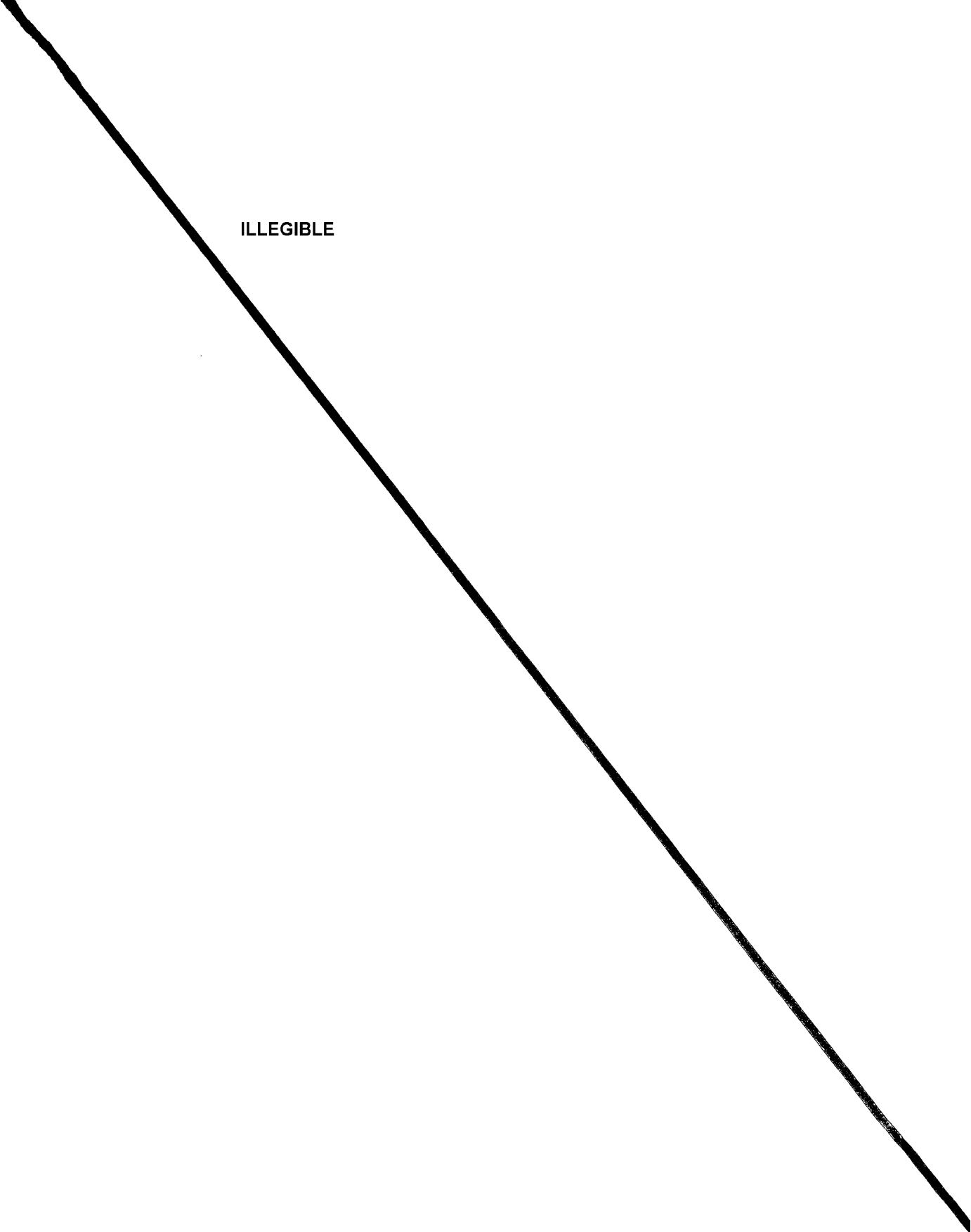
PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 7,  
pp. 1119-1121

TEXT: The above method was applied for the production of polyamides and polyesters from fumaric acid chloride and various diamines and diphenols. For 5 - 10 minutes fumaric acid in 0.1 mole solution of xylene was added to an aqueous 0.1 mole solution or suspension of diamine or diphenol by vigorous mixing (appr. 2500 rpms). The solution contained 2 moles of lye per one mole of diamine or diphenol. The reaction mixture was then stirred for 15 to 20 minutes and filtered. The polymer was washed with distilled water, acetone, methyl alcohol, and ether before it was dried at 50°C until the weight constant was reached. The thermomechanic curves (Fig. 1), intrinsic viscosity of a 0.5% polyamide solution in 96% of H<sub>2</sub>SO<sub>4</sub>, nitrogen

Card 1/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900039-6

ILLEGIBLE



L 17697-66

ACC NR: AP6007856

filler resulted in a monotonic drop in the adhesion strength. This result was  
ascribed to the poorer plasticity of filled mixtures. Orig. art. has: 3 figures.  
[BO]

SUB CODE: 11/ SUBM DATE: 22Feb65/ ORIG REF: 006/ ATD PRESS: 4210

Card 2/2

L 17697-66 EWP(j)/EWT(m)/T/EWP(v) RM/WW

ACC NR: AP6007856

(A)

SOURCE CODE: UR/0138/66/000/002/0023/0025

AUTHOR: Rayevskiy, V. G.; Maloshchuk, Yu. S.; Treyger, D. M.; Voyutskiy, S. S.

ORG: Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov. (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Effect of fillers<sup>v</sup> on the cohesion and adhesion of rubbers 16,44,55

SOURCE: Kauchuk i rezina, no. 2, 1966, 23-25

TOPIC TAGS: synthetic rubber, filler, cohesion, adhesion

ABSTRACT: A study has been made of the effect of the filler content on the cohesion strength of rubbers and on rubber-to-fabric adhesion strength. The adhesion strength was determined in stripping tests. The effect of fillers on the cohesion of rubber was studied with nonvulcanized SKN-40 nitrile rubber and chalk filler. Mixtures with various filler contents were prepared on a hot mill. Cohesion of the mixtures first increased, then dropped, with an increase in the chalk content. The positive effect of small amounts of chalk, an inert filler, on the cohesion strength was ascribed to the chalk's contribution to mechanical degradation of the rigid SKN-40 rubber in milling. Large amounts of chalk decrease the contact surface of the polymer. The effect of fillers on the rubber-to-fabric adhesion strength was studied with vulcanized sodium butadiene (SKB-30r)<sup>12</sup> rubber, polychloroprene rubber, or butyl rubber filled with chalk or carbon black or channel black (a reinforcing filler) and cotton, polyamide, or glass fabric. Addition of increasing amounts of inert or reinforcing

Card 1/2

UDC: 678.7:678.046:539.612

41  
B

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900039-6

BUIA, Al., prof. univ. (Craiova); MAIOS, C., (Craiova)

In the Oltenia region. Natura Biologie 15 no. 3: 70-76  
My-Je '63.

BULIA, Al., prof. (Craiova); MALOS, C., asist, (Craiova)

Two species of trifolium, very rare elsewhere in Rumania, are existing in Oltenia. Natura Biologie 13 no.6:42-46 N-D '61.

1. Catedra de botanica a Institutului agronomic "T. Vladimirescu," Craiova.

MALOROSSIYANOVA, A.M. (Moskva, L-345, Ostashkovskoye shosse, 177.b, kv.68);  
SHALEVICH, M.A.

Glomus stomach tumors. Vop. onk. 8 no.9:80-83 '62.

(MIRA 17:6)

1. Iz rentgenovskogo otdeleniya (zav... A.M. Malorossiyanova) i patologoanatomiceskogo otdeleniya (zav... prof. Ya.L. Rapoport) 4-y Moskovskoy gorodskoy klinicheskoy bol'ницы (glavnnyy vrach-kand. med. nauk G.F. Papko) i kliniki Obshchey kirurgii (dir... prof. G.P. Zaytsev) pediatricheskogo fakul'teta 2-go Moskovskogo meditsinskogo instituta imeni Pirogova.

MALOROSSIYANOVA, A.M.

Clinical-roentgenological-morphological parallels in gastric polypi.  
Sov. med. 23 no.3:28-35 Mr '59. (MIRA 12:4)

1. Iz rentgenovskogo otdeleniya (zav. - doktor med. nauk M. F. Vrzhi-kovskaya) 4-y Moskovskoy gorodskoy klinicheskoy bol'nitsy (glavnnyy vrach M. V. Ivanyukov) i kliniki obshchey khirurgii (dir. - prof. G. P. Zaytsev) pediatriceskogo fakul'teta II Moskovskogo meditsinskogo instituta imeni N. I. Pirogova.

(STOMACH NEOPIASMS,  
polypi (Rus))  
(POLYPI  
stomach (Rus))

Maloruy, G.

V Shifts in minerals and gas in the tissues in various conditions of collapse and the influence of antihistamines.  
G. Maloruy. Naunyn-Schmiedebergs Arch. exp. Pathol. Pharmakol., 228, 130-8(1958).—Rabbits were treated at 15-30-min. intervals with increasing doses of histamine, starting with 0.3 mg./kg. and increasing by 0.1 mg. which produced after the 3rd to 5th injection collapse with respiratory block. Preceding injection of 5 mg. Padisal (N-(2'-trimethylammonium - 2'-methylethyl)phenothiazine hydroxide) produced tolerance to 60-100 times the fatal histamine dose. Atosil is half as effective as Padisal. Megaphon still less. Antihistamines do not prevent orthostatic collapse. In this type the blood CO<sub>2</sub> increases, and the O decreases more than in histamine collapse. In blood stasis by ligation the damaged tissue releases much K, which must be taken up by the intact tissue lest collapse sets in. The electrolyte shifts in the various collapses are discussed.

A. E. Meyer

MALOPURIN, I.

DUBROVSKIY, G., inzh.-podpolkovnik; MALOPURIN, I., inzh.-podpolkovnik.

Twenty-five ton jack. Tankist no.1:45-47 Ja '58. (MIRA 11:3)  
(Lifting jacks)

MALONOWSKI, J.

SVORAD, D.; MALONOWSKI, J.

Objective photometric method of evaluation of actographic picture.  
Cesk. fysiolog. 6 no.3:443-445 Aug 57.

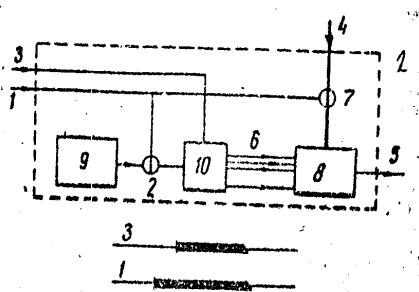
1. Fysicologicky ustav CSAV, Praha.  
(SLEEP, physiology,  
objective photometric evaluation of movement record (Cz))  
(MOVEMENT,  
objective photometric evaluation of record in sleep (Cz))

Round-off generator of random ...

S/194/62/000/005/005/157  
D222/D309

first n of the m significant digits of a number to be rounded. The coded voltage 5 is fed from the output of the decoder to a binary counter which also receives a coded voltage representing the number to be rounded. The rounded number is taken from the output of the counter and fed to the arithmetic unit or other blocks of the computer. The random pulse generator 9, decoder 10, and decoder 8 can be built with relays or electronic units. 3 figures. [Abstractor's note: Complete translation].

Fig.



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S/194/62/000/005/005/157  
D222/D309

AUTHOR: Malon, Stanislav

TITLE: Round-off generator of random values for binary digital computers

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1962, abstract 5-1-75shch (Chekhosl. pat., kl. 42<sup>m</sup>, 14, no. 95493, 15.06.60)

TEXT: A generator of random numbers for rounding off the results of calculations executed on digital computers is patented; it excludes the possibility of accumulating round-off errors, which occurs with the usual methods, and improves the accuracy of the results. The essence of this device (see figure) is the utilization of the random-number generator 9, which is connected to the distributor 10 at  $2^{n+1}$  positions through the logic circuit 2, which also receives a control impulse 1. The distributor 10 is triggered by impulse 3. The outputs 6 of the distributor 10 are fed to the decoder 8, which receives, via logic circuit 7, from the arithmetical unit 4 the

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On the basic principles ...

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Z/026/60/005/004/001/004  
D231/D304

It is shown how functional relationships can be generated by means of a differential analyzer by determining the differential equation satisfied by the relationship and then solving it by the analyzer. In conclusion an example is given of a scheme which was used to solve the equation

$$y'' + a_1 y' + \frac{1}{3} \sin(y + y_0) + a_2(1 - \sin y_0) = 0^{11}$$

for the initial conditions  $x_0$ ,  $y_0$ ,  $y'_0$  and constants  $a_1$ ,  $a_2$ . There are 26 figures and 14 references: 12 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: C.E. Shannon, Mathematical theory of the differential analyzer. Journ. Math. Phys., Vol. XX, 1942; J.J. Gait, J.C. Nutter, Tridac - a research flight simulator. Electronic Engineering, 9 a 10, 1956.

SUBMITTED: September 29, 1958

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On the basic principles ...

23911  
Z/026/60/005/004/001/004  
D231/D304

Thus  $e_1$  can be integrated with respect to  $t$  with a calculable error, usually of the order 0.5 to 5 %. The analogue differential analyzer is then discussed, defined as a machine for solving a system of differential equations and differential analyzers are classified as follows: (1) Mechanical differential analyzers; they are slow and heavy but are capable of high precision (0.01 to 0.1 %) depending on the integrating units. (2) Electro-mechanical differential analyzers where mechanical function units and integrators are linked by servo-mechanisms. (3) Electro-mechanical differential analyzers with electro-mechanical function units and integrators. This type is relatively uncommon, accuracies range from 0.1 to 1 %. (4) Electronic differential analyzers using d.c. amplifiers, which are compact and capable of accuracies of 0.5 to 5 %. Machines of type (2) and (4) have been completed (or are under construction) at several Research Institutes in Czechoslovakia. At present digital differential analyzers are becoming increasingly popular. The principles underlying the analogue differential analyzer are then described.

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On the basic principles ...

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D231/D304

then, if the input voltage  $e_1$  is a differentiable function of time  $t$ , the output voltage  $e_2$  is shown to be given by

$$e_2 = -\frac{1}{RC} \int_0^t e_1 dt + \theta \left( \frac{t}{RC(A+1)} \right)$$

where  $A$  is the gain of the amplifier ( $A \gg 1$ ) and the "error"  $\theta$  is a known function of  $\frac{t}{RC(A+1)}$ .

$$[\theta = \frac{1}{RC} \sum_{k=1}^{\infty} a^k \omega_k] \text{ with } a = \frac{1}{RC(A+1)}, \text{ and } \omega_k = (-1)^k \sum_{i=0}^{\infty} \frac{e_1^{(i)}(0) t^{i+k+1}}{(i+k+1)!}$$

Card 3/5

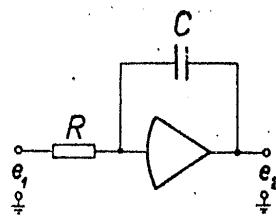
23911

On the basic principles ...

Z/026/60/005/004/001/004  
D231/D304

cities, but only small angular deviations of the wheels concerned, how the angle turned by the friction wheel can be made to represent integrals of the Stieltjes type,  $\int f(x) dg(x)$ , or of the Cauchy-Riemann type,  $\int h(x) dx$ . The inverse connection of the integrator to represent integrals of the type  $\int \frac{d\varphi}{\eta(\varphi)}$  is discussed. A description is given of the basic electrical circuits, using high gain d.c. amplifiers with feed-back loops, to represent addition, multiplication by a constant and integration. The integrating circuit is described in detail: If a d.c. amplifier, resistance R and capacitance C are connected as shown in Fig. 15

Fig. 15



Card 2/5

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D231/D304

AUTHOR: Maloň, Stanislav

TITLE: On the basic principles of mathematical analogue  
computers

PERIODICAL: Aplikace matematiky, v. 5, no. 4, 1960, 247 - 270

TEXT: The article summarizes and formulates the theory of analogue computers with regard to the present state of development of the subject in Czechoslovakia. The basic computing units are considered from their functional (not their constructional) point of view. Special attention is given to the differential analyzer. Analogue function generators are described in the mechanical case where a "function table" (input table) is used to represent a given function by the relation between the rotations of two shafts. The differential gear adding mechanism is described. The mechanical integrator of the friction wheel type is discussed in detail and it is shown, in a derivation which does not involve time or angular velo-

Card 1/5

X

MALON, S.

Use of an automatic computer in geodesy. p. 189.

GEODETICKY A KARTOGRAFICKY OBZOR. (Ustredni sprava geodesie a kartografie) Praha,  
Czechoslovakia. Vol. 5, no. 10, Oct. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 6, no. 12, December 1959,  
Uncl.

Malon, S.

New metals and alloys. Pt. 1. (To be contd.) p. 193. NOVA  
TECHNIKA. (Rada vedeckych technickych spolecnosti pri Ceskoslo-  
venske akademii ved) Praha. Vol. 1, no. 7, July 1956.

Source: EEAL      LC      Vol. 5, No. 10      Oct. 1956

MALON, ST.

Soupis hutnickch casopisu ve statnich vedeckych knihovnach, vzkumnych ustavech, vysokych skolah a nekterych podnicich. Sest: St. Malon, Dusan Sim ndi (a) Jan Simik. (vyd. 1) Ostrava, 1956. 183 p. (Statni vedecka knihovna v Ostrave. Publikace. Rada 1, cis.67) (List of periodicals on metallurgy in the state research institutes, universities, and certain industrial enterprises. 1st. ed)

SO: Monthly Index of EastEuropean Accessions (EEAI) LC. Vol. 7, no. 4,  
April 1958

Malon

Aluminum, a much-sought material. p. 128

Vol. 10, no. 2, Feb. 1955.  
HUTNICKE LISTY

SO: Monthly List of East European Accession, (EEAL), LC, Vol. 4, No. 9,  
Sept. 1955, Uncl.

MALON S.

MALON S.

Military conditions in Europe according to Huttnick's monthly list of  
Machinery, Industrial and Commercial, p. 116 (Hutnick Listy, Brno, Vol. 9, no. 9,  
Sept. 1954)  
East  
X: Monthly List of Economic Conditions (Military), U.S., Vol. 1, no. 1,  
June 1954, Uncl.

MALON, S.

The role of technical bibliography in research. p. 176.  
Statute of the Scientific-Technical Council of the Scientific Research Institute  
of Technological Management of the Machinery Industry. p. 181.  
ZA SOCIALISTICKOU VEDU A TECHNIKU. Vol. 4, Apr. 1954.

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 5, No. 6, June 1956 Uncl.

POHL, Zbigniew, mgr inz.; MALON, Henryk

Live cleaning of insulators of aerial stations. Energetyka  
Pol 18 no.4114-117 Apr'64

1. Technical University, Wroclaw (for Pohl). 2. Power Station,  
Czechnica (for Malon).

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900039-6

MALON, F., MUDR, S. V., B., USA.

Workers preparing materials for construction  
in the building industry. (1) (2) (3) (4) (5)

MALON, Frantisek, MUDr., KUNZ Gottwaldov.

A sectioned glass blower pipe. Pracovni lek. 7 no. 3:167 May 55.

(GLASS  
blowing, sectioned pipe)  
(APPARATUS AND INSTRUMENTS  
glass blowing pipe, sectioned)

TEL'PUKHOVSKIY, N.A.; Prinimali uchastiye: MOROZ, A.M.; YARMOLINSKIY, S.Kh.;  
MALOMYZHEV, L.M.; BURKOV, V.I.

Electronic circuit of an apparatus for the emission of  
exact time signals. Trudy inst. Kom. stand., mer i izm.  
prib. no.58:108-119 '62. (MIRA 15:11)

1. Sotrudniki Irkutskoy laboratorii Vsesoyuznogo nauchno-  
issledovatel'skogo instituta fiziko-tehnicheskikh i  
radiotekhnicheskikh izmereniy (for Moroz, Yarmolinskiy,  
Malomyzhev, Burkov).

(Time signals)

MALOMUZH, G.P.

Age changes in the human olfactory receptor. Trudy gos.nauch.-  
issl.inst.ulka, gorla i nosa. 6:166-177 '55. (MIRA 12:10)

1. Iz ot dela morfologii (nauchnyy rukovoditel' - prof. Ya.A.  
Vinnikov) Gosudarstvennogo nauchno-issledovatel'skogo instituta  
ulka, gorla i nosa.

(OLFAC TORY NERVE)

MALOMUZH, F.F., dotsent

Surgical treatment of congenital atresia of the auditory canal  
with microtia. Vestn. otorinolaring. 25 no.3:29-33 '63  
(MIRA 17:1)

1. Iz otsteleniya detskogo vozrasta (zav. - dotsent F.F.Malo-  
muzh) Gosudarstvennogo nauchno-issledovatel'skogo instituta  
zdravookhraneniya RSFSR, Moskva.

FRATUEVICH, Yu.M.; MALOMUZH, F.F.; DENISENKO, P.P.

Analysis of the mutual potentiation of the tranquilizing effect of aminazin and metamizil in tympanoplasty in children.  
Vest. otorin. 24.no.6:44-50 N-D'62. (MIKA 16:7)

1. Iz akademicheskoy gruppy deystvitel'nogo chlena AMN SSSR prof. G.N.Speranskogo, iz itdeleniya detskogo vozrasta (zav.-dotsent F.F.Malomuzh) Nauchno-issledovatel'skogo instituta ukha, nosa i gorla, Moskva, iz ot dela farmakologii (zav.-deystvitel'nyy chlen AMN SSSR prof. S.V.Anichkov) Instituta eksperimental'noy meditsiny AMN SSSR, Leningrad.  
(TYMPANAL ORGAN--SURGERY) (CHLORPHROMAZINE)  
(BENZILIC ACIDS)

MALOMUZH, F.F. (Moskva)

Chronic tonsillitis and rheumatic fever. Med. sestra 21 no.2:  
9-14 F '62.

(TONSILS--DISEASES)  
(RHEUMATIC FEVER)

(MIR 15:3)

TABOLIN, V. A.; MALOMUZH, F. F.; KONOVALOVA, A. V.

Deafness in children with hemolytic disease in the newborn period, associated with the Rh factor. Vest. otorin. no. 1: 41-46 '62.  
(MIRA 15:7)

1. Iz kafedry pediatrii (zav. - deyствител'nyy chlen AMN SSSR prof. G. N. Speranskiy) TSentral'nogo instituta usovershenstvovaniya vrachey i detskogo otdeleniya Nauchno-issledovatel'skogo instituta ukha, gorla i nosa (zav. - dotsent F. F. Malomuzh), Moskva.

(DEAFNESS) (ERYTHROBLASTOSIS FETALIS)

MALOMUZH, F.F.; VISHNEVSKAYA, N.A.

Plastic operation on the sound conducting apparatus in children;  
tympanoplasty in children. Trudy gos. nauch.-issl. inst. ukha,  
gorla i nosa no.11:223-232 '59.  
(MIRA 15:6)

1. Iz otdeleniya detskogo vozrasta Gosudarstvennogo nauchno-  
issledovatel'skogo instituta ukha, gorla i nosa.  
(TYMPANAL ORGAN--SURGERY)

MALOMUZH, F.F.; KOSACHEVA, A.P.; LUNEVA, A.S.; AMIROV, R.Z.; BUREVA, V.B.;  
MARKOVA, V.I.; FEDOROVA, V.A.

Pathogenesis of acute and chronic otitis in children. Trudy  
gos. nauch.-issl. inst. ukha, gorla i nosa no.11:199-206  
'59.

(MIRA 15:6)

1. Iz klinicheskogo otdeleniya detskogo vozrasta Gosudarstvennogo  
nauchno-issledovatel'skogo instituta ukha, gorla i nosa.  
(EAR--DISEASES)

MALOMUZH, F.F., dotsent, BOGOMIL'SKIY, R.D., kand.med.nauk

Otorhinolaryngological division of the F.E. Dzerzhinski Children's Hospital on the 40th anniversary of the October Revolution [with summary in English]. Pediatrīja '56 no.6:76-81 Je '58 (MIRA 11:6)  
(HOSPITALS

Dzerzhinski Children's Hosp., Moscow, otorhinolaryngol.  
serv. (Rus))  
(PEDIATRICS,  
same)  
(OTORHINOLARYNGOLOGY,  
same)

b

s

MALOMUZH, F.F.

Fish hook with a lure as a bronchial foreign body.  
Vest, oto-rin. 20 no. 5:120-121 S-0 '58 (MIRA 11:12)

1. Iz otsteleniya detskogo vozrasta Gosudarstvennogo nauchno-  
issledovatel'skogo instituta Ministerstva zdravookhraneniya RSFSR  
(dir. - prof. V.K. Trutnev), Moskva.  
(BRONCHI, for bodies.  
fish hook with lure (Rus))

MALOMUZH, F.F.

Cancer of the nose in a three-months old infant. Vest.oto.-rin. 20 no.3:93-95 My-Je '58  
(MIRA 11:6)

1. Iz kliniki detskogo vozrasta Gosudarstvennogo nauchno-issledovatel'skogo instituta ukha,gorla i nosa Ministerstva zdravookhraneniya RSFSR (dir. -zasluzhennyy deyatel' nauki prof. V.K. Trutnev) na baze detskoy bol'nitsy imeni Dzerzhinskogo.  
(NOSE, neoplasms

basal cell carcinoma in 3 months old inf. (Rus))  
(CARCINOMA, BASAL CELL, in inf. & child.  
nose, in 3 months old inf. (Rus))

MALOMUZH, F.F., dots. (Moskva)

Foreign bodies of the respiratory organs in children. Med.sestra  
17 no.3:8-12 Mr '58.  
(MIRA 11:4)

1. Iz otdeleniya detskogo vozrasta Gosudarstvennogo nauchno-  
issledovatel'skogo instituta otorinolaringologii Ministerstva  
zdravookhraneniya RSFSR.  
(RESPIRATORY ORGANS--FOREIGN BODIES)

MALOMZH, F.F.

USSR/ General Problems of Pathology. Tumors

Abs Jour : Ref Zhur - Biol., No 5, 1958, 23161 U-4  
Author : Malomzh, F.F.  
Inst :  
Title : Osteoblastoclastoma of the Maxillary Sinus  
Orig Pub : Tr. Gos. n.-i. in-ta ukha, i nosa, 1956; vyp. 8, 245.

Abstract : This is a rare case of osteoblastoclastoma of the upper jaw in a 7-year old boy. A radical Caldwell-Lue operation on the maxillary sinus was performed. The walls of the sinus were found to be thin and pushed apart. The tumor firmly grew into the walls resembling a spongy bone soaked in blood. A histologic study revealed, in addition to elongated spindle and gigantic multinucleated cells, numerous young bony trabeculae surrounded by osteoblasts. X-ray therapy was given.

Card 1/1

MALOMUZH, F. F.

Cells - Tumors

"Case of large ethmoid cell osteoma." Vest. oto-rim. 14 no. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1952, Uncl.

1. HALCHIZI, F. F., Docent; RACHINA, M. V.
2. USSR (600)
4. Otorhinolaryngology
7. Tissue therapy of certain diseases of the ear, throat, and nose in children.  
Pediatrilia No. 5, 1952
9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

MALOMUZH, F. F.

"Case of Pharyngeal Cysts,"

SO: Vest. Oto-rinolaringol, No. 2, 1949: Docent, Otorhinolaryngological Dept.,  
Moscow Children's Hospital im. Dzerzhinsky, -cl949-.

MALOMUZH, A.S., inzh.

Progressive organization of the maintenance and repair of power  
equipment. Energetik 10 no.7:5-6 J1 '62. (MIRA 15:7)  
(Electric power plants—Maintenance and repair)

I 14867-66

AJ; NR: AT6007402

ergometry it was demonstrated that, upon performance of a certain type of physical work, the regulatory phenomena mentioned were followed by a counter-regulatory phase which manifested itself in changes in O<sub>2</sub> consumption and CO<sub>2</sub> production. An analysis of the autonomic reactions during the individual phases of work (state of readiness, running activity, ergostasis, restitution) revealed that the trophotropic dominance in restitution was marked in subjects showing an economical regulation, while it was slight or absent in the other subjects. The counter-regulatory phenomenon may thus be looked upon as an overcompensation, creating in the organism conditions more favorable from the standpoint of performance than those prevailing before muscle work. [JPRS]

SUB CODE: 06 / SUBM DATE: none

Card 2/2 J0

L 14867-66

ACC NR: AT6007402

AUTHOR: Malomsoki, J.; Stadler, E.; Nemessuri, M.

ORG: Central Institute of Sports Medicine, Budapest (Kozponti Sportegeszsegugyi  
Intezet)

TITLE: Spiroergometric demonstration of the autonomic regulation related to  
muscle activity [This paper was presented at the 29th Meeting of the Hungarian  
Physiological Society held in Szeged from 2 to 4 July, 1964]

SOURCE: Academia scientiarum hungaricae. Acta physiologica, v. 26, Supplement,  
1965, 24-25

TOPIC TAGS: medical conference, circulatory system, human physiology, biologic  
respiration, muscle physiology

ABSTRACT:

Society it has been reported that a negative phase in cardiac frequency de-  
veloped following controlled physical activity. This counter-regulatory  
phenomenon was ascribed to trophotropic dominance and was correlated with  
the degree of physical fitness. In further investigations using spiro-

At the 1963 meeting of the

cardiac frequency de-

veloped following controlled physical activity. This counter-regulatory

Card 1/2

CSINADY, Jeno.; ARNOTI, Tibor.; MALOMSOKI, Jeno.

Investigations of the nervous system in ping-pong players.  
Kiserletes orvostud 7 no.4:397-403 July 55.

1. Orszagos Testnevelesi es Sportegeszsegugyi Intezet Kutatolaboratoriuma.

(NERVOUS SYSTEM, physiology,  
in ping-pong players)  
(ATHLETICS, physiology,  
ping-pong players nervous system)